

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-28 (cancelled).

Claim 29 (new) A method for providing an explosion-proof instrument quick disconnect and seal for use in hazardous environments, comprising:

providing a first electrical insert having electrical contacts within a first bore of a first portion;

providing a second electrical insert having electrical contacts within a second bore of a second portion;

inserting an end of the second portion into the first bore of the first portion to define an explosion-proof chamber within the first and second portions when the first and second portions are coupled to one another;

detachably coupling the first portion to the second portion by rotating a coupling having internal threads for engaging mating threads formed on the first portion;

wherein rotation of the coupling in a first direction causes the first portion to move longitudinally toward the second portion to electrically connect the respective contacts of the first and second electrical inserts after a predetermined number of threads on the first portion and coupling engage, and wherein rotation of the coupling in the opposite direction causes the first portion to move longitudinally away from the second portion to electrically disconnect the respective contacts of the first and second electrical inserts.

30. (new) The method according to claim 29, wherein the predetermined number of threads is at least approximately five threads.

31. (new) The method according to claim 29, wherein the coupling is made from stainless steel.

32. (new) The method according to claim 29, wherein the electrical inserts are made of non-electrically conductive material.

33. (new) The method according to claim 29, wherein the contacts in the first insert are electrically conductive pins and the contacts in the second insert are electrically conductive sleeves for receiving a respective electrically conductive pin.

34. (new) The method according to claim 33, wherein one of the contacts in the first insert is a ground pin that is longer than the remaining pins to ensure that the quick disconnect and seal is grounded before the remaining pins are electrically connected to the respective sleeves in the second insert and remains grounded until after the remaining pins are electrically disconnected from the respective sleeves in the second insert.

35. (new) The method according to claim 29, further comprising electrically connecting each of the contacts in the first and second inserts to a respective electrical conductor.

36. (new) The method according to claim 35, further comprising soldering the electrical conductor to a respective contact in the first or second inserts.

37. (new) The method according to claim 35, further comprising crimping the electrical conductor to a respective contact in the first or second inserts.

38. (new) The method according to claim 35, further comprising providing a seal within the first bore to prevent gases or vapors from passing between the explosion-proof chamber and out a distal end of the first portion, wherein the electrical conductors connected to the contacts of the first insert extend out of the first bore and through the distal end of the first portion.

39. (new) The method according to claim 38, wherein the seal is made from a sealing compound.

40. (new) The method according to claim 35, further comprising providing a seal within the second bore to prevent gases or vapors from passing between the explosion-proof chamber and out an end of the second portion, wherein the electrical conductors connected to the contacts of the second insert extend out of the second bore and through the end of the second portion.

41. (new) The method according to claim 40, wherein the seal is made from a sealing compound.

42. (new) The method according to claim 29, wherein the first and second portions are made from stainless steel.

43. (new) The method according to claim 29, further comprising connecting each end of the quick disconnect and seal to an adjoining conduit.

44. (new) The method according to claim 29, further comprising providing a plurality of threads on a distal end of the first portion for detachably engaging mating threads formed in an adjoining conduit.

45. (new) The method according to claim 29, further comprising rotatably positioning a union on an end of the quick disconnect and seal for connecting the quick disconnect and seal to an adjoining conduit.

46. (new) The method according to claim 45, wherein the union is rotatably positioned on the first end of the second portion.

47. (new) The method according to claim 45, further comprising providing a plurality of threads on the union for detachably engaging mating threads formed in the conduit.

48. (new) The method according to claim 45, wherein the union is made from stainless steel.

49. (new) The method claim 29, further comprising providing a locating pin extending from the proximal end of the first portion, and receiving the locating pin within a hole formed in an end of the second portion to facilitate proper alignment of the respective contacts in the first and second inserts.

50. (new) The method according to claim 29, further comprising providing a seal between the first and second portions to prevent gases or vapors from entering the quick disconnect and seal.

51. (new) The method according to claim 50, wherein the seal is an O-ring positioned within a groove formed in the exterior of the second portion.

52. (new) The method according to claim 29, further comprising coupling the first and second portions to one another without interrupting the power supply to the contacts of the first or second inserts.

53. (new) The method according to claim 29, further comprising detaching the first and second portions from one another without first interrupting the power supply to the contacts of the first or second inserts.